

High Energy Physics - Experiment

Inclusive Search for Standard Model Higgs Boson Production in the WW Decay Channel using the CDF II Detector

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We present a search for standard model (SM) Higgs boson production using ppbar collision data at $\sqrt{s} = 1.96$ TeV, collected with the CDF II detector and corresponding to an integrated luminosity of 4.8 fb⁻¹. We search for Higgs bosons produced in all processes with a significant production rate and decaying to two W bosons. We find no evidence for SM Higgs boson production and place upper limits at the 95% confidence level on the SM production cross section ($\sigma(H)$) for values of the Higgs boson mass (m_H) in the range from 110 to 200 GeV. These limits are the most stringent for $m_H > 130$ GeV and are 1.29 above the predicted value of $\sigma(H)$ for $m_H = 165$ GeV.

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